Informal Regulatory Analysis

Of

Amendments to Chapters 60, 62, 63, and 64

Notice of Intended Action

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I. Background

The Department of Natural Resources (DNR) has proposed several amendments to Chapters 60, 62, 63, and 64 of the Iowa Administrative Code, Title 567. The proposed amendments were approved by the Environmental Protection Commission at its August 19, 2008 meeting, and they were included in a Notice of Intended Action published on September 10, 2008 in the *Iowa Administrative Bulletin* as **ARC 7152B**. Several terms used in the description of the proposed rules are specific to wastewater permitting, and these terms are defined at the end of this document.

The purpose of the proposed amendments to Chapters 60, 62, 63, and 64 is to update the wastewater rules to meet requirements in the Code of Federal Regulations, reflect changes in technology and water quality standards, and codify language from DNR's Policy Implementation Guidance (PIG) documents. The proposed amendments to Chapter 60 include the addition of several definitions, the addition of newer permit application forms, and clarification of the language concerning permit applications. The proposed amendments to Chapter 62 include language on prohibited discharges, on the derivation of effluent limits in permits using Total Daily Maximum Load (TMDL) allocations, on the reuse of treated effluent, and on the calculation of the 30-day average percent removal of 5 day Carbonaceous Biochemical Oxygen Demand (CBOD5).

The proposed amendments to Chapter 63 will replace the language on bypasses, will update monitoring requirements for all NPDES permits by increasing the base monitoring requirements and adding new monitoring, and will remove the monitoring table for inorganic waste discharges and replace it with a rule-referenced document. The current language on bypasses in Chapter 63 needs to be amended to include public notice requirements; monitoring, disinfection, and cleanup requirements; new notification and reporting requirements; and a description of a sewage treatment works upset. The language proposed for bypasses and upsets in Chapter 63 addresses all of these issues.

The current monitoring requirements in Chapter 63 have not been updated in more than twenty years. The proposed monitoring will update the minimum monitoring requirements for organic waste dischargers by increasing some of the current requirements and by adding new monitoring. The increase in the current monitoring will allow for better operational control and compliance monitoring, thereby ensuring that all facilities are properly operated and will meet permit requirements to protect water quality. The new monitoring for Total Nitrogen, Total Phosphorus, and Total Kjeldalh Nitrogen (TKN) that is proposed for medium and large facilities will give the facilities and the DNR needed information on the nutrient levels coming from dischargers of organic wastes. Effluent limits for Total Nitrogen, Total Phosphorus, and TKN will not be included in permits at this time. The data from the new monitoring will assist the DNR in the development of nutrient water quality standards and TMDLs and will help insure that appropriate limits are placed in TMDLs and subsequent NPDES permits.

The minimum monitoring table in Chapter 63 for inorganic waste dischargers does not include monitoring requirements for several types of industrial dischargers. Due to the complexity of inorganic wastes and the diversity in industrial discharges, the

development of a single table to cover all inorganic waste discharges is impractical. In light of this, the proposed amendments will replace Table 5 with a rule-referenced document titled Supporting Document for Permit Monitoring Frequency Determination. This document details a step-by-step process for determining monitoring for all inorganic waste dischargers, and is based on the existing statement in section 63.3 that discusses the basis for additional monitoring in operation and NPDES permits.

The proposed amendments to Chapter 64 will add two classes of facilities that will be exempted from obtaining permits, clarify the language regarding the issuance and denial of permits, clarify the public notice requirements for permits, add language on public requests to amend, revoke and reissue, or terminate permits, and add language on the determination of substantial compliance. Chapter 64 currently allows for the amendment, revocation and reissuance, and termination of permits under certain conditions. The language does not include all of the conditions under which permits may be amended, revoked and reissued, or terminated, and the rule language is proposed to be expanded to incorporate the other conditions for permit changes both from existing practice and from the Code of Federal Regulations. A significant change to this section is the inclusion of language from Code of Federal Regulations that will allow interested persons to submit requests to the DNR for the amendment, revocation and reissuance, and termination of permits. Previously, only permittees were allowed to submit such requests. The proposed amendments will allow interested persons to submit such requests for cause and will allow the director to act upon such requests by denying, amending, reissuing, or terminating permits. The current rule language does not specify what constitutes substantial compliance with permit conditions. Permits currently may not be reissued if permittees have not substantially complied with permit conditions, and the rules need to clarify when a permittee has not substantially complied with a permit. The proposed language on substantial compliance is from the Federal Regulations and from a DNR PIG.

The Administrative Rules Review Committee reviewed the proposed amendments during its meeting on October 14, 2008. At that time, the committee voted to direct the DNR to complete an informal regulatory analysis of the proposed rules, in compliance with Iowa Code section 17A.4A, subsection 2, paragraph “a.” The elements to be included in the informal regulatory analysis are specifically identified as follows:

(1) A description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule.
(2) A description of the probable quantitative and qualitative impact of the proposed rule, economic or otherwise, upon affected classes of persons, including a description of the nature and amount of all of the different kinds of costs that would be incurred in complying with the proposed rule.
(3) The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues.
(4) A comparison of the probable costs and benefits of the proposed rule to the probable costs and benefits of inaction.
(5) A determination of whether less costly methods or less intrusive methods exist for achieving the purpose of the proposed rule.

(6) A description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule.

Each of these elements will be addressed in turn.

II. Elements of the Analysis

A. Description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule.

Classes of persons who will be affected by the proposed rule include all entities that must apply for or hold an individual non-storm water NPDES permit or an operation permit. Entities that must apply for or hold an individual non-stormwater NPDES wastewater permit include all industries, municipalities and semi-publics that operate facilities that discharge wastewater directly to surface waters of the state, and certain animal feeding operations (AFOs). Municipal entities include cities, towns, and any other public body created under state law. Semi-publics include mobile home parks, trailer courts, campgrounds (private and state-owned), restaurants, gas stations, and other small businesses that operate wastewater treatment systems that discharge to water of the state. The holders of operation permits are considered semi-publics, but operation permits are for land application of wastewater rather than discharge of wastewater to a waterbody.

The major costs of the proposed rule can be attributed to the change in the monitoring frequencies for some of the entities that must apply for or hold an individual non-storm water NPDES permit or an operation permit. The entities that will bear the costs of the proposed rule include all municipalities and semi-publics that operate facilities that discharge wastewater directly to surface waters of the state.

Industries that must apply for or hold an individual non-storm water NPDES permit or an operation permit will be affected by the provisions of the proposed rule. However, industries will not bear any significant portion of the cost of the proposed rules. Industrial monitoring costs are not anticipated to increase as a result of the proposed rule. The current monitoring table for industries is proposed to be replaced with a document titled "Supporting Document for Permit Monitoring Frequency Determination". This document clarifies how monitoring is determined for industrial facilities, it does not increase the base monitoring required for these facilities.

Animal feeding operations (AFO) required to have individual non-storm water NPDES permits are those that discharge to waters of the Untied States. Included in this group are open feedlots with 1000 or more animal units, designated open feedlots, open feedlots with a stream passing through the feedlot or other direct manure discharge with 300 or more animal units, and some combined open feedlots and confinement operations that are required to obtain a permit as a result of DNR evaluation. Only those AFOs that are required to have a non-storm water NPDES permit will be affected by this proposed rule. However, AFOs will not bear any of the cost of this proposed rule, as the requirements for AFO NPDES permits are not changing.

Classes of persons who will be affected by and will benefit from the proposed rule include the citizens of Iowa (public), the DNR, and all entities that must apply for or hold an individual non-storm water NPDES permit or an operation permit. The major benefit to all of these persons will be the increased clarity of the rules. Several old portions of the rules are proposed to be updated, and several vague sections of the rules will be amended to be more specific. The public, the DNR, and regulated entities will all have a clearer understanding of the NPDES and operation permit requirements and development process as a result of this rulemaking.

In addition, the proposed monitoring requirements will benefit the citizens of Iowa by ensuring that all wastewater discharges will meet the water quality standards, resulting in better protection of Iowa's waters from pollutants. Any wastewater discharges not meeting the water quality standards will be identified sooner with the proposed monitoring requirements than with the old monitoring requirements. Other benefits of the proposed rule include increasing the amount of data on the composition of wastewater, enabling the DNR to set more reasonable NPDES permit limits for all dischargers; increasing public awareness of the frequency of wastewater bypasses to better protect public health and the environment; and the adoption of a new avenue for the public to request changes to NPDES permits.

B. A description of the probable quantitative and qualitative impact of the proposed rule, economic or otherwise, upon affected classes of persons, including a description of the nature and amount of all of the different kinds of costs that would be incurred in complying with the proposed rule.

The major impact of the proposed rule will be the change in monitoring costs for municipal and semi-public facilities that are required to have an individual non-storm water NPDES permit or an operation permit. Each municipality and semi-public facility will incur a different cost. Please refer to Appendix B for a comparison of the current and proposed monitoring requirements.

To calculate the costs of the proposed monitoring, the DNR determined the current and anticipated sampling, time, and labor costs for each type of facility. The sampling costs were determined by assuming that every facility contracts with a laboratory to analyze their samples and averaging the statewide price of sampling from three different state laboratories. For both compliance monitoring (proposed Tables I, II, and III) and operational monitoring (proposed Table IV), the number of samples for each parameter were counted for each type of facility and multiplied by the average statewide sample prices. This resulted in a current and anticipated sampling cost for each type of municipal and semi-public facility.

To determine the time and labor costs for each facility, the number of times per year and number of hours per sampling event were determined for each class of facilities. The total number of hours for all sampling events during one year was multiplied by an assumed labor rate of $25 per hour per operator. This resulted in a current and anticipated time/ labor cost for each type of public facility. The current and anticipated

sampling and time/ labor costs were added together to determine the total cost of the proposed monitoring for each type of municipal and semi-public facility.

The calculations and the total current and anticipated costs were presented to a group of stakeholders on November 7, 2008. The stakeholders made several recommendations regarding the sampling and time/ labor costs which were incorporated into the final calculations. There were four significant recommendations; 1) reduce the Total Nitrogen (TN), Total Phosphorus (TP), and Total Kjeldahl Nitrogen (TKN) monitoring; 2) remove the costs of settleable solids monitoring; 3) recalculate the drive time and mileage costs for *e.coli*; and 4) increase the new sampling equipment costs for small and small-to-medium continuously discharging facilities. The amount of TN, TP, and TKN samples were reduced, as discussed in Section E of this document.

The reduction of the TN, TP, and TKN sampling based on the recommendation of the stakeholders is discussed in section E below. The stakeholders indicated that samples for settleable solids are always done in-house and take very little time, thus the sampling and time/ labor costs for settleable solids should be removed. Based on this recommendation, the cost calculations were changed to remove the sampling and time/ labor costs associated with settleable solids sampling.

The costs for the new *e.coli* sampling requirements, including the time to drive the *e.coli* sample to the lab and mileage reimbursement, were added to the costs for the Controlled Discharge Lagoon (CDL) facilities in the proposed Table I of Chapter 63. The requirement to perform bacteria sampling is new for the CDLs, thus the costs of the drive time and mileage must be included in the cost calculations. The round-trip mileage to and from laboratories on average was determined to be 90 miles, based on a map showing a 40-mile radius around all laboratories in Iowa provided by Iowa Rural Water Association. At the recommendation of stakeholders, the mileage calculation used to estimate the drive time was changed to the IRS reimbursement cost per mile, and the total time required to deliver an *e.coli* sample was changed from three to four hours.

The sampling cost, drive time, and mileage costs associated with *e.coli* sampling were not included for the continuously discharging facilities in the proposed Tables II (suspended growth) and III (aerated lagoons & media filters). These costs were not included because the requirement to sample for bacteria when a bacteria limit is included in the permit is an existing requirement for continuously discharging facilities. The proposed rules will change the bacteria parameter from fecal coliform to *e.coli* and will include the established sample holding time for *e.coli*, but these proposed changes are based on a change in Chapter 61 of the IAC, Water Quality Standards (WQS) that occurred in 2005. Permits that have been renewed in the last year for facilities with bacteria limits already include *e.coli* limits and monitoring, as permit limits are based on the WQS. The costs to the continuously discharging facilities resulting from the change in the bacteria parameter (fecal coliform to *e.coli*) were incurred in the WQS change in 2005.

The DNR assumed that the small continuously discharging facilities in the proposed Tables II (suspended growth) and III (aerated lagoons & media filters) would need one new sampling unit to enable them to complete the proposed monitoring. The

stakeholders indicated that the small continuously discharging facilities may need two new sampling units, and small-to-medium sized facilities may also need one new sampling unit. They also indicated that the assumed equipment and maintenance cost of the sampling equipment was too low.

The proposed monitoring requires new influent wastewater sampling and increases the number of effluent wastewater samples for small continuously discharging facilities, resulting in the requirement to obtain new sampling equipment. The total cost of purchasing new sampling equipment for small continuously discharging facilities was changed based on the stakeholder's recommendations. The up-front equipment cost and the yearly maintenance cost were increased.

The DNR did not change the assumption that only one new sampling unit is required for small continuously discharging facilities and no new units are required for small-to-medium sized facilities. Currently, the required effluent wastewater samples are taken manually, without a sampling unit, at these small continuously discharging facilities. The proposed increase in effluent wastewater monitoring will require these facilities to obtain a new sampler for the effluent wastewater; the higher number per year of required effluent samples makes manual sampling difficult and impractical. However, the number of proposed samples for influent wastewater is very low. Due to the small number of samples, manual sampling for influent wastewater will be the most practical option for these facilities. The operators at these facilities are already experienced in performing manual sampling on the effluent wastewater; the new requirements will decrease the number of manual samples that need to be performed and will move that sampling from the effluent wastewater to the influent wastewater. New sampling equipment will be required for the proposed effluent wastewater samples, but it will not be required for the proposed influent wastewater samples. Thus, only one new sampler is required for small continuously discharging facilities.

The DNR also did not change the assumption that small-to-medium sized continuously discharging facilities will not need new sampling equipment. Currently, the small-to-medium sized facilities are required to take several influent and effluent wastewater samples. The stakeholders indicated that some of these facilities only had one sampling unit, even though two are needed according to the current rules. The DNR calculated the existing time/ labor costs for these facilities assuming they only have one sampling unit, and the calculations indicated that any facilities that do not currently possess two composite samplers will actually see a decrease in cost if they purchase a second sampling unit. It would be impractical for these facilities to use only one sampling unit, thus the DNR will continue to assume that small-to-medium sized continuously discharging facilities already have two sampling units, and will not need to purchase another due to the proposed monitoring.

The proposed monitoring will result in a change in the monitoring costs for all municipal and semi-public facilities. After taking the recommendations of the stakeholders into account, the total cost of the proposed monitoring for all municipal and semi-public facilities in the state is $1,121,760.00. For a detailed analysis of the monitoring costs for each proposed monitoring table by facility size, please refer to Appendix C.

Any additional monitoring costs for municipal facilities will be covered by an increase in sewer rates. Semi-public facilities and businesses will need to raise the costs of their services or take money from their profits to cover any additional monitoring costs. For example, mobile home parks and trailer courts would need to increase their sewer rates, campgrounds would need to raise their camping rates, and restaurants and gas stations would either derive the money from their parent corporation, raise product prices, or use profit money to pay the fee, decreasing their profit margin.

C. The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues.

The DNR will incur costs associated with the proposed monitoring rules, as the DNR owns several campgrounds and fish hatcheries that require NPDES permits. The total cost to the DNR of the proposed monitoring is $25,567.00. The Iowa DOT will also incur costs associated with the proposed monitoring rules, as they own several rest areas and maintenance garages that require NPDES permits. The total cost to the DOT of the proposed monitoring is $12,988.00. The Department of Corrections owns one facility with an NPDES permit, and they will incur a cost of $1,075.00 from the proposed monitoring.

The DNR will also incur costs processing and storing increased amounts of data and information from the new monitoring requirements and the new bypass reporting requirements. Costs associated with processing and responding to new requests from the public to change permits will also be incurred by the DNR. There are no anticipated costs to any other agencies besides the Iowa DOT and Iowa Department of Corrections, and no anticipated effects on state revenues.

D. A comparison of the probable costs and benefits of the proposed rule to the probable costs and benefits of inaction.

Costs of the proposed rule to the entities regulated by permits

- higher sewer rates for some communities and semi-publics
- increase in the amount of time worked by operators of some municipal and semi-public facilities

Benefits of the proposed rule to the entities regulated by permits

- improved operational control
- better defense against any potential law suits alleging that a regulated facility is not meeting water quality standards
- new and increased amounts of facility design data for use in planning facility upgrades
- data to prove to DNR whether or not limits are needed for certain pollutants
- data that will help establish the amount of nutrients that WWTPs contribute to Iowa waters

Costs of inaction on the proposed rule to the entities regulated by permits

- continued lack of confidence in their facilities ability to meet Iowa's water quality standards
- continued risk of subjecting the state to de-delegation petitions to remove permitting authority from Iowa state government and return it to U.S. EPA (this would result in permits being written for facilities by U.S. EPA rather than by the DNR)
- continued need for facilities to obtain facility design data before planning a facility upgrade
- establishment of limits in permits for certain pollutants that facilities may not be able to meet
- continued lack of data to support the assumption that non-point source contributions cause nutrient impairments in Iowa's waters

Benefits of inaction on the proposed rule to the entities regulated by permits
- no increased financial burden on communities and semi-publics
- no additional work for facility operators

Costs of the proposed rule to DNR
- increase in operating costs for DNR-owned campgrounds and fish hatcheries
- increase in the amount of time worked by the DNR-employed operators of the wastewater facilities at campgrounds and fish hatcheries
- new time spent on responding to new requests to change permits from interested persons
- increased time spent recording monitoring data from wastewater facilities
- increased time spent responding to phone calls and logging reports concerning bypasses

Benefits of the proposed rule to DNR
- accurate data to prove that permit limits are not necessary in some cases
- accurate data for the development of future permit limits in some cases
- accurate data for the development of TMDLs
- better assurance that state waters are protected according to State law and State Code
- better information on and tracking of bypass events

Costs of inaction on the proposed rule to the DNR
- continued lack of confidence in the ability of WWTPs to meet Iowa's water quality standards
- continued risk of subjecting Iowa to de-delegation petitions to remove permitting authority from Iowa state government and give it back to U.S. EPA, because Iowa's NPDES rules would remain less stringent than federal regulations
- continued need for DNR to take enforcement action to correct problems which may not exist
- continued lack of data to establish nutrient enrichment TMDLs
- continued lack of pertinent information on bypasses

Benefits of inaction on the proposed rule to DNR
- none

E. A determination of whether less costly methods or less intrusive methods exist for achieving the purpose of the proposed rule.

Two less costly approaches exist that will achieve the purpose of the proposed rules, which is to update the wastewater rules to meet requirements in the Code of Federal Regulations, reflect changes in technology and water quality standards, and codify language from the DNR's PIG documents. The costs of the proposed monitoring can be reduced by lowering the amount of Total Nitrogen (TN), Total Phosphorus (TP), and Total Kjeldahl Nitrogen (TKN) monitoring required by the original proposed monitoring tables in Chapter 63; and potential costs resulting from the inclusion of a Sanitary Sewer Overflow (SSO) prohibition in Chapter 63 can be diffused by altering the proposed bypass and SSO language to remove the references to SSOs.

A reduction in the overall monitoring costs can be achieved by reducing the amount of TN, TP, and TKN monitoring that was originally proposed. On average, a facility would save $50 for each TN sample removed, $16.50 for each TP sample removed, and $29 for each TKN sample removed. The proposed monitoring requires multiple TN and TP samples per year for all facilities, and multiple TKN samples per year for larger facilities. As the size of a facility increases, more samples are required.

The cost savings achieved by reducing the amount of TN, TP, and TKN samples vary by facility design and size. As the TN, TP, and TKN samples are not required to determine compliance with an NPDES or operation permit in most cases, the DNR has decided to reduce the amount of these proposed samples that are required by the monitoring tables in Chapter 63. This decision was made after meeting with representatives from the regulated communities. The original proposed TN, TP, and TKN data was to be gathered to assist the DNR in the development of nutrient water quality standards and TMDLs to insure that appropriate limits are placed in TMDLs and subsequent NPDES permits. Similar results can be achieved with a reduction in the amount of required samples. The DNR will remove the proposed TN and TP monitoring for all controlled discharge lagoon facilities and for small continuously discharging facilities, and will decrease the amount of monitoring for TN, TP, and TKN for the larger continuously discharging facilities. The projected annual sewer rates listed in Table 1 were calculated after the TN, TP and TKN sampling was reduced.

Several comments were received from the public concerning the estimated cost of the proposed bypass rules in Chapter 63. The proposed amendments to the bypass rules included language concerning sanitary sewer overflows (SSOs) from sanitary sewer collection systems. The commentors were concerned that the prohibition of SSOs in the proposed rule would lead to very expensive re-designing of existing sewer collection systems and treatment plants, and that the federal rules do not define or specify restrictions on SSOs at this time. The DNR did not intend to cause a re-design of existing collection systems, nor did it intend to be significantly more stringent on SSOs than federal regulations. In light of the potential and unintended costs and the lack of federal rule language describing SSOs, the SSO language has been removed from the bypass section of the proposed rules. This decision was made after meeting with representatives from the regulated communities. The proposed rules will still include public notice requirements, monitoring, disinfection, and cleanup requirements, and new

notification and reporting requirements for bypasses, in addition to a description of a sewage treatment works upset.

F. A description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule.

Three alternative methods that could have achieved the purpose of the proposed rule were considered, but were rejected for the reasons noted below. The DNR considered lowering or eliminating the most significant monitoring costs for controlled discharge lagoons (CDLs) and small continuously discharging facilities, and considered replacing the current bypass language with the federal bypass language.

The significant cost associated with the proposed rules for controlled discharge lagoons is the cost of transporting *e.coli* samples to the laboratory. The sampling method for *e.coli* established in the federal Standard Methods requires a six-hour holding time for all *e.coli* samples. In practice, this means that a bacteria sample cannot be mailed overnight to a laboratory; the sample must be driven to the laboratory so that it is received by the laboratory within the required six hours. Under the proposed rules, operators of controlled discharge lagoons will be required to spend approximately four hours delivering *e.coli* samples to a laboratory each time a sample is required.

The six-hour holding time requirement for *e.coli* samples is based on federal rule and it cannot be changed. The DNR considered dropping the *e.coli* sampling requirement for CDLs, but the bacteria sampling is necessary to ensure that these facilities meet water quality standards. For several years, the DNR has assumed that well-operated and designed CDLs meet water quality standards. However, there is little data to support this assumption. If the DNR does not have *e.coli* sampling data to prove that CDLs can meet water quality standards, effluent bacteria limits will be necessary in the permits for CDLs. Rather than requiring all CDLs to meet bacteria limits (which would require more sampling), the DNR is proposing to require that CDLs sample only enough to prove that they can meet water quality standards without permit limits. The six-hour holding time for *e.coli* samples will not be changed and the proposed *e.coli* sampling requirement will not be removed in order that CDLs can prove they meet water quality standards according to federal bacteria sampling methods without further sampling or permit limits.

The significant cost associated with the proposed rules for small continuously discharging facilities is the cost of installing new wastewater sampling equipment. Currently, small continuously discharging facilities are not required to take samples of their influent (raw) wastewater and are required to take very few samples of their effluent (final) wastewater. The proposed rules require influent wastewater sampling and increase the number of effluent wastewater samples for small continuously discharging facilities, resulting in the requirement to obtain new sampling equipment.

Federal rules require that 85% of suspended solids and biochemical oxygen demand be removed during treatment at all wastewater facilities. The 85% removal cannot be calculated without both influent and effluent samples; thus, influent sampling is proposed for small continuously discharging facilities. This requirement cannot be

waived, as it is a federal requirement. The proposed monitoring increases the amount of effluent samples required for the small continuously discharging facilities, as the effluent samples are currently taken so infrequently that it is difficult to determine if these facilities are complying with the effluent limits in their permits. The difficulty would continue if the amount of effluent sampling was kept at current levels. The DNR considered removing the influent samples and keeping the effluent sampling at the same level, but in order to comply with federal rules and determine if these small facilities are complying with their permits, the increased monitoring and new sampling equipment is necessary.

The DNR considered several alternatives for the proposed bypass language. The current bypass language needs to be updated as it is vague and does not allow for public notification of bypass events. Direct adoption of the federal rules regarding bypasses was considered, but was rejected in favor of the following considerations.

- The proposed bypass requirements concerning requests for anticipated bypasses provide more clarity than the federal regulations. The federal regulations require submittal of prior notice of an anticipated bypass, but do not describe what "prior notice" consists of. The proposed requirements for an anticipated bypass set out what information should be included in a written request for an anticipated bypass. The proposed requirements concerning the written request ("prior notice") are necessary to clarify what a regulated entity must do in the case of an anticipated bypass. The anticipated costs of this proposed amendment will include the operator time to prepare and submit the written request and the postage to mail the request to the DNR. These costs are negligible, as anticipated bypasses occur only rarely.

- The public notice requirements for bypasses add additional detail not present in the federal requirements. The DNR believes that the public and downstream users should be informed when a bypass has occurred. The proposed language allows the DNR to determine when public notice is necessary, thus many small or precipitation-related bypasses will not require public notice. The anticipated costs of this proposed amendment will include the operator time to prepare the notice and the cost of publishing the notice. The costs to regulated entities of this proposed amendment cannot be quantified, as the occurrence of bypasses that could require public notice cannot be predicted with any certainty.

- The proposed requirements that describe the required written reports for unanticipated bypasses complies with the section of the federal rules which requires a written submission concerning the circumstances of noncompliance which may endanger heath or the environment. A different section of the Code of Federal Regulations requires a written submission only for bypasses which exceed any effluent limitation, and DNR's proposed rule requires a written submission for all bypasses, whether or not they exceed effluent limitations in the permit. Written reports are proposed to be required for all bypasses because either bypasses occurring in the collection system will not have any effluent limitations or it will be unknown whether there is an exceedance of the effluent limitation. In order for the DNR to adequately address problems created by bypasses, it is important to have a detailed description of all bypasses that may pose a risk to human heath or the

environment, whether or not the bypass has exceeded an effluent limitation in the permit. The anticipated costs of this proposed amendment will include the operator time to prepare and submit the written report with the required monthly operation reports. These costs will be negligible, as facilities already report bypasses on their monthly operation reports.

- The proposed bypass requirements on additional monitoring, sampling, or analysis of a bypass require additional steps beyond the federal regulations. Additional monitoring, sampling, or analysis of a bypass is necessary to determine the effect of the bypass upon human heath and the environment. Without sampling data, it is only possible to guess at the effect of a bypass. When the effects of a bypass will be detrimental to the environment, additional disinfection and cleanup is warranted. The proposed cleanup and disinfection requirements will ensure that bypasses are dealt with appropriately. The anticipated costs of this proposed amendment will include the sampling costs and the operator time to take and record the sample and the disinfection costs and operator time to disinfect or cleanup the bypass. The costs to regulated entities of this proposed amendment cannot be quantified, as bypasses cannot be predicted with any certainty and any sampling, disinfection, or cleanup that may be required will be different for different bypasses.

- When additional monitoring, sampling, or analysis is required to determine the effects of a bypass, such analyses need to be submitted to the DNR. The anticipated costs of this proposed amendment will include the postage to mail the sample data to the DNR. Regulated entities will incur little, if any, costs from the additional data submittal required by this proposed rule.

The DNR, after discussions with stakeholders and a thorough review of the federal regulations, has decided to propose bypass requirements that provide more detail than the federal regulations regarding reporting, public notice, monitoring, and cleanup of bypasses. These requirements will not impose significant additional costs to regulated entities. As noted in Section E of this document, the proposed bypass language does not include references to Sanitary Sewer Overflows at this time, as U.S. EPA has not yet modified the Code of Federal Regulations to specifically discuss Sanitary Sewer Overflows.

Appendix A -
Definitions

Bypass – means the intentional diversion of waste streams from any portion of a treatment works or collection system. A bypass does not include internal operational waste stream diversions that are part of the design of the treatment works, maintenance diversions where redundancy is provided, diversions of wastewater from one point in a collection system to another point in a collection system, or wastewater backups into buildings that are caused in the building lateral or private sewer line. Bypasses include internal waste stream diversions in a treatment works that result in partially treated waste being discharged.

Municipality – city, town, borough, county, parish, district, association or other public body created by or under state law.

NPDES (National Pollutant Discharge Elimination System) - The NPDES program regulates the direct discharge of wastewater to surface waters. Under this program, industrial facilities and POTWs (publicly owned treatment works) must receive a NPDES permit before discharging wastewater directly to surface waters. This program was created by the Clean Water Act and the authority to issue NPDES permits has been delegated to Iowa by the Environmental Protection Agency.

NPDES Permit – an operation permit that authorizes the discharge of any pollutant into a navigable water.

Operation Permit – a written permit authorizing the operation of a wastewater disposal system or part thereof or discharge source, and, if applicable, the discharge of wastes from said disposal system or part thereof or discharge source to waters of the state.

Semi-public (sewage disposal system) – a system for the treatment or disposal of domestic sewage which is not a private sewage disposal system and which is not owned by a city, sanitary sewer district, or a designated and approved management agency.

Storm water – storm water runoff, snow melt runoff, and surface runoff and drainage.

Appendix B -
Monitoring Tables: Comparison of Current and Proposed Monitoring

Table I Changes (Deletions - red, Additions - blue, Unchanged - black)

Wastewater Parameter	Sampling Location	Sample Type	Frequency by P.E.				
			< 100	101-500	501-1,000	~~1,001-3,000~~ > 1,001	~~> 3,000~~
Flow	Raw	24-Hr Total	1/ Week	Daily	Daily	Daily	~~Daily~~
	Final	Instantaneous	2/ Week	Daily During Periods of Discharge			-
BOD5	Raw	24-Hr Composite	-	-	-	1/3 Months	~~1/ Month~~
~~BOD5~~ CBOD5	Final	Grab	~~1/6 Months~~	~~1/Month~~	~~1/ 2 Weeks~~	~~1/ Week~~	~~2/ Week~~
			Twice during drawdown[5]				
Total Suspended Solids (TSS)	Raw	24-Hr Composite	-	-	-	1/3 Months	~~1/ Month~~
	Final	Grab	~~1/6 Months~~	~~1/6 Months~~	~~1/6 Months~~	~~1/3 Months~~	~~1/Month~~
			Twice during drawdown[5]				
Ammonia Nitrogen	Final	Grab	~~1/6 Months~~ 1/month	~~1/Month~~	~~1/2 Weeks~~	~~1/ Week~~	~~2/ Week~~
				Twice during drawdown[5]			
E.coli	Final	Grab	1/month	1/ 2 Weeks	1/ 2 Weeks	1/ 2 Weeks	-
pH	Raw	Grab	-	-	-	1/3 Months	~~1/Month~~
	Final	Grab	~~1/6 Months~~ 1/month	~~1/Month~~ 1/2 Weeks	~~1/2 Weeks~~ 1/ Week	1/ Week	~~2/ Week~~

Changes to Table II for suspended growth facilities (Deletions - red, Additions - blue, Unchanged - black)

Wastewater Parameter	Sampling Location	Sample Type	Frequency by P.E.						
			< 100	101 - 500	501-1,000	1,001-3,000	3,001-15,000	15,001 – 105,000	> 105,000
Flow	Raw or Final	24-Hr Total	1/ Week	Daily	Daily	Daily	Daily	Daily	Daily
BOD5	Raw	24-Hr Comp.	~~-~~ 1/6 months	~~-~~ 1/3 months	1/ Week	1/ Week	2/ Week	2-5/ Week[5]	~~7/ Week~~ Daily
~~BOD5~~ CBOD5	Final	24-Hr Comp.	~~1/3 Months~~ 1/ month	~~1/ Month~~ 1/2 Weeks	1/ Week	1/ Week	2/ Week	2-5/ Week[5]	~~7/ Week~~ Daily
Total Suspended Solids (TSS)	Raw	24-Hr Comp.	~~-~~ 1/6 months	~~-~~ 1/3 months	~~1/3 Months~~ 1/2 Weeks	~~1/ Month~~ 1/ Week	~~1/ Week~~ 2/ Week	2-5/ Week[5]	~~7/ Week~~ Daily
	Final	24-Hr Comp.	~~1/3 Months~~ 1/ month	~~1/3 Months~~ 1/2 Weeks	~~1/3 Months~~ 1/2 Weeks	~~1/ Month~~ 1/ Week	~~1/ Week~~ 2/ Week	2-5/ Week[5]	~~7/ Week~~ Daily
Ammonia Nitrogen	Final	24-Hr Comp.	~~1/3 Months~~ 1/ month	~~1/ Month~~ 1/2 Weeks	1/ Week	1/ Week	2/ Week	2-5/ Week[5]	~~7/ Week~~ Daily
TKN[8]	Raw	24-Hr Comp.	-	-	-	1/2 months	1/ Month	1/ Month	1/2 Weeks
Total Nitrogen	Final	24-Hr Comp.	-	-	-	1/3 months	1/3 months	1/2 months	1/2 months
Total Phosphorus	Final	24-Hr Comp.	-	-	-	1/3 months	1/3 months	1/2 months	1/2 months
pH	Raw	Grab	~~-~~	-	1/ Week	1/ Week	2/ Week	2-5/ Week[5]	~~7/ Week~~ Daily
	Final	Grab	~~1/3 Months~~ 1/ month	~~1/ Month~~ 1/2 Weeks	1/ Week	1/ Week	2/ Week	5/ Week	~~7/ Week~~ Daily
~~Fecal Coliform~~ E.coli	Final	Grab	5 samples, 1/3 months	5 samples, 1/3 months	5 samples, 1/3 months	5 samples, 1/3 months	5 samples, 1/3 months	5 samples, 1/3 months	5 samples, 1/3 months
Temperature	Raw	Grab	~~-~~	-	1/ Week	1/ Week	2/ Week	2-5/ Week[5]	~~7/ Week~~ Daily
	Final	Grab	~~1/3 Months~~ 1/ month	~~1/ Month~~ 1/2 Weeks	1/ Week	1/ Week	2/ Week	2-5/ Week[5]	~~7/ Week~~ Daily
~~Settleable Solids~~	~~Final~~	~~Grab~~	~~1/ Week~~	~~1/ Week~~	~~2/ Week~~	~~2/ Week~~	~~3/ Week~~	~~5/ Week~~	~~7/ Week~~

Changes to Table II (new Table III) for aerated lagoons and fixed film facilities (Deletions - red, Additions - blue, Unchanged - black)

Wastewater Parameter	Sampling Location	Sample Type	Frequency by P.E.						
			< 100	101 - 500	501-1,000	1,001-3,000	3,001-15,000	15,001 – 105,000	> 105,000
Flow	Raw or Final	24-Hr Total	1/ Week	Daily	Daily	Daily	Daily	Daily	Daily
BOD5	Raw	24-Hr Comp.	~~-~~ 1/6 months	~~-~~ 1/3 months	1/ Week	1/ Week	2/ Week	2-5/ Week[5]	~~7/ Week~~ Daily
~~BOD5~~ CBOD5	Final	24-Hr Comp.	~~1/3 Months~~ 1/month	1/ Month	1/ Week	1/ Week	2/ Week	2-5/ Week[5]	~~7/ Week~~ Daily
Total Suspended Solids (TSS)	Raw	24-Hr Comp.	~~-~~ 1/6 months	~~-~~ 1/3 months	~~1/3 Months~~ 1/ month	~~1/ Month~~ 1/ 2 weeks	1/ Week	2-5/ Week[5]	~~7/ Week~~ Daily
	Final	24-Hr Comp.	~~1/3 Months~~ 1/month	~~1/3 Months~~ 1/ Month	~~1/3 Months~~ 1/ month	~~1/ Month~~ 1/ 2 weeks	1/ Week	2-5/ Week[5]	~~7/ Week~~ Daily
Ammonia Nitrogen	Final	24-Hr Comp.	~~1/3 Months~~ 1/month	1/ Month	1/ Week	1/ Week	2/ Week	2-5/ Week[5]	~~7/ Week~~ Daily
TKN	Raw	24-Hr Comp.	-	-	-	1/2 months	1/ Month	1/ Month	1/2 Weeks
Total Nitrogen	Final	24-Hr Comp.	-	-	-	1/3 months	1/3 months	1/2 months	1/2 months
Total Phosphorus	Final	24-Hr Comp.	-	-	-	1/3 months	1/3 months	1/2 months	1/2 months
pH	Raw	Grab	-	-	1/ Week	1/ Week	2/ Week	2-5/ Week[5]	~~7/ Week~~ Daily
	Final	Grab	~~1/3 Months~~ 1/month	1/ Month	1/ Week	1/ Week	2/ Week	5/ Week	~~7/ Week~~ Daily
~~Fecal Coliform~~ E.coli	Final	Grab	5 samples, 1/3 months	5 samples, 1/3 months	5 samples, 1/3 months	5 samples, 1/3 months	5 samples, 1/3 months	5 samples, 1/3 months	5 samples, 1/3 months
Temperature	Raw	Grab	-	-	1/ Week	1/ Week	2/ Week	2-5/ Week[5]	~~7/ Week~~ Daily
	Final	Grab	~~1/3 Months~~ 1/month	1/ Month	1/ Week	1/ Week	2/ Week	2-5/ Week[5]	~~7/ Week~~ Daily
~~Settleable Solids~~	~~Final~~	~~Grab~~	~~1/ Week~~	~~1/ Week~~	~~2/ Week~~	~~2/ Week~~	~~3/ Week~~	~~5/ Week~~	~~7/ Week~~

Appendix C -
Cost Estimate Tables

Total Proposed Costs

Sum of Tables I, II, and III	**$1,044,110**
Additional operational sampling costs	$77,750
Total Proposed Cost resulting from proposed monitoring: (sum of Tables plus additional operating costs)	**$1,121,760**

Table I – Controlled Discharge Lagoons

Population Equivalent		**< 100**	**101-500**	**501-1,000**	**1,001-3,000**	**> 3,000**
Sample Costs	Total # current samples	78	431	435	443	495
	Current sample cost	$161	$161	$229	$547	$1,182
	Total # proposed samples	86	445	449	449	461
	Proposed sample cost	$319	$426	$467	$649	$649
	Sample difference	8	14	14	6	-34
	Sample cost increase	$157	$264	$237	$102	-$534
Time/ Labor Costs	Old time/ labor Cost	$300	$300	$400	$1,850	$4,750
	New time/ labor cost	$705	$1,111	$1,311	$2,561	$2,561
	Time/ labor cost difference	$405	$811	$911	$711	-$2,189
Cost Difference	**Cost difference**	**$563**	**$1,075**	**$1,148**	**$812**	**-$2,723**
	# of facilities	65	267	124	75	3
	Total Cost Difference	$36,566	$287,025	$142,345	$60,915	-$8,169
Total Cost Difference	**$518,682**					

Table I – Controlled Discharge Lagoons (Total)

Total Cost Difference (Parts One and Two)	**$518,682**

Table II – Activated Sludge, SBR, Oxidation Ditch (Part One)

Population Equivalent		**< 100**	**101 - 500**	**501-1,000**	**1,001-3,000**	**3,001-15,000**
Sample Costs	Total # current samples	124	469	841	857	1,353
	Current sample cost	$250	$657	$4,504	$4,688	$10,022
	Total # proposed samples	116	503	781	847	1,321
	Proposed sample cost	$820	$1,764	$5,011	$6,052	$11,839
	Sample difference	-8	34	-60	-10	-32
	Sample cost increase	$570.00	$1,107.40	$507.47	$1,364.34	$1,816.54
Time/ Labor Costs	Old time/ labor Cost	$1,250	$3,750	$9,100	$9,100	$18,200
	New time/ labor cost	$3,379	$4,004	$9,100	$9,100	$18,200
	Time/ labor cost difference	$2,129	$254	$0	$0	$0
Cost Difference	**Cost difference**	**$2,699**	**$1,361**	**$507**	**$1,364**	**$1,817**
	# of facilities	6	21	16	27	47
	Total Cost Difference	$16,194	$28,589	$8,120	$36,837	$85,377

Table II – Activated Sludge, SBR, Oxidation Ditch (Part Two)

Population Equivalent		**15,001 – 30,000**	**30,001 – 45,000**	**45,001 – 75,000**	**75,001 – 105,000**	**> 105,000**
Sample Costs	Total # current samples	1,561	2,029	2,497	2,965	4,015
	Current sample cost	$11,222	$16,832	$22,443	$28,054	$39,384
	Total # proposed samples	1,325	1,793	2,261	2,729	3,686
	Proposed sample cost	$11,972	$17,583	$23,193	$28,804	$40,485
	Sample difference	-236	-236	-236	-236	-329
	Sample cost increase	$750.20	$750.20	$750.20	$750.20	$1,101.00
Time/ Labor Costs	Old time/ labor Cost	$18,200	$27,300	$36,400	$45,500	$63,875
	New time/ labor cost	$18,200	$27,300	$36,400	$45,500	$63,875
	Time/ labor cost difference	$0	$0	$0	$0	$0
Cost Difference	**Cost difference**	**$750**	**$750**	**$750**	**$750**	**$1,101**
	# of facilities	9	4	5	3	11
	Total Cost Difference	$6,752	$3,001	$3,751	$2,251	$12,111

Table II – Activated Sludge, SBR, Oxidation Ditch (Total)

Total Cost Difference (Parts One and Two)	**$202,983**

Table III - trickling filter, media filter, sand filter/ septic tanks, aerated lagoons (Part One)

Population Equivalent		< 100 media filter	< 100 aerated lagoon	101 – 500 media filter	101 - 500 aerated lagoon	501-1,000	1,001-3,000
Sample Costs	Total # current samples	124	124	469	469	841	857
	Current sample cost	$250	$250	$657	$657	$4,504	$4,688
	Total # proposed samples	116	116	433	433	753	791
	Proposed sample cost	$820	$820	$890	$890	$4,688	$5,407
	Sample difference	-8	-8	-36	-36	-88	-66
	Sample cost increase	$570	$570	$233	$233	$185	$718
Time/ Labor Costs	Old time/ labor Cost	$1,250	$200	$3,750	$600	$9,100	$9,100
	New time/ labor cost	$3,379	$1,225	$4,004	$1,850	$9,100	$9,100
	Time/ labor cost difference	$2,129	$1,025	$254	$1,250	$0	$0
Cost Difference	**Cost difference**	**$2,699**	**$1,595**	**$487**	**$1,483**	**$185**	**$718**
	# of facilities	35	11	30	38	54	103
	Total Cost Difference	$94,465	$17,545	$14,620	$56,367	$9,965	$74,002

Table III - trickling filter, media filter, sand filter/ septic tanks, aerated lagoons (Part Two)

Population Equivalent		3,001-15,000	15,001 – 30,000	30,001 – 45,000	45,001 – 75,000	75,001 – 105,000	> 105,000
Sample Costs	Total # current samples	1,353	1,561	2,029	2,497	2,965	4,015
	Current sample cost	$10,022	$11,222	$16,832	$22,443	$28,054	$39,384
	Total # proposed samples	1,217	1,325	1,793	2,261	2,729	3,686
	Proposed sample cost	$10,639	$11,972	$17,583	$23,193	$28,804	$40,485
	Sample difference	-136	-236	-236	-236	-236	-329
	Sample cost increase	$617	$750	$750	$750	$750	$1,101
Time/ Labor Costs	Old time/ labor Cost	$18,200	$18,200	$27,300	$36,400	$45,500	$63,875
	New time/ labor cost	$18,200	$18,200	$27,300	$36,400	$45,500	$63,875
	Time/ labor cost difference	$0	$0	$0	$0	$0	$0
Cost Difference	**Cost difference**	**$617**	**$750**	**$750**	**$750**	**$750**	**$1,101**
	# of facilities	60	14	1	5	3	1
	Total Cost Difference	$37,024	$10,503	$750	$3,751	$2,251	$1,101

Table III - trickling filter, media filter, sand filter/ septic tanks, aerated lagoons (Total)

Total Cost Difference (Parts One and Two)	**$322,344**

References

Iowa League of Cities. http://www.iowaleague.org/AboutCities/CitiesInIowa.aspx